

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 5x \leq \frac{20x - 4}{3} < 7 + 3x$$

- A. $(a, b]$, where $a \in [0.75, 9]$ and $b \in [-3.75, -1.5]$
 - B. $[a, b)$, where $a \in [-2.25, 6.75]$ and $b \in [-5.25, -0.75]$
 - C. $(-\infty, a] \cup (b, \infty)$, where $a \in [0.75, 6]$ and $b \in [-5.25, -0.75]$
 - D. $(-\infty, a) \cup [b, \infty)$, where $a \in [3, 4.5]$ and $b \in [-8.25, -0.75]$
 - E. None of the above.
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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{8}{7} - \frac{10}{9}x \geq \frac{-8}{5}x - \frac{10}{3}$$

- A. $(-\infty, a]$, where $a \in [7.5, 9.75]$
 - B. $[a, \infty)$, where $a \in [7.5, 15]$
 - C. $[a, \infty)$, where $a \in [-12, -8.25]$
 - D. $(-\infty, a]$, where $a \in [-12, -4.5]$
 - E. None of the above.
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{9}{3} - \frac{5}{9}x \geq \frac{3}{8}x + \frac{4}{4}$$

- A. $(-\infty, a]$, where $a \in [1.5, 6]$
- B. $[a, \infty)$, where $a \in [-1.5, 5.25]$
- C. $[a, \infty)$, where $a \in [-7.5, -1.5]$
- D. $(-\infty, a]$, where $a \in [-5.25, 0]$

E. None of the above.

4. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No more than 3 units from the number -3 .

- A. $(-\infty, -6) \cup (0, \infty)$
 - B. $(-\infty, -6] \cup [0, \infty)$
 - C. $[-6, 0]$
 - D. $(-6, 0)$
 - E. None of the above
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 7x > 9x \text{ or } -5 + 8x < 11x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.25, -3.75]$ and $b \in [-4.5, 0]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [0, 2.25]$ and $b \in [0.75, 6.75]$
 - C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.25, 4.5]$ and $b \in [-0.75, 9.75]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, 0]$ and $b \in [-6.75, 2.25]$
 - E. $(-\infty, \infty)$
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6. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 9 units from the number 4.

- A. $(-\infty, -5] \cup [13, \infty)$
- B. $(-\infty, -5) \cup (13, \infty)$
- C. $(-5, 13)$

- D. $[-5, 13]$
 - E. None of the above
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$8 - 4x \leq \frac{23x - 6}{7} < 9 + 3x$$

- A. $(-\infty, a] \cup (b, \infty)$, where $a \in [0, 1.5]$ and $b \in [33, 40.5]$
 - B. $(-\infty, a) \cup [b, \infty)$, where $a \in [0, 4.5]$ and $b \in [33, 39]$
 - C. $(a, b]$, where $a \in [0, 3.75]$ and $b \in [32.25, 35.25]$
 - D. $[a, b)$, where $a \in [0.97, 2.77]$ and $b \in [33.75, 36.75]$
 - E. None of the above.
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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3x - 8 \leq 9x + 7$$

- A. $(-\infty, a]$, where $a \in [-2.25, 0.75]$
 - B. $[a, \infty)$, where $a \in [-2.6, 0.3]$
 - C. $(-\infty, a]$, where $a \in [0.25, 2.25]$
 - D. $[a, \infty)$, where $a \in [-0.1, 1.5]$
 - E. None of the above.
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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4x + 3 > 3x - 5$$

- A. (a, ∞) , where $a \in [-6.2, 1.1]$

- B. $(-\infty, a)$, where $a \in [0.14, 3.14]$
 - C. (a, ∞) , where $a \in [-0.7, 3.1]$
 - D. $(-\infty, a)$, where $a \in [-9.14, -0.14]$
 - E. None of the above.
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4 + 9x > 11x \text{ or } 5 + 7x < 8x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.35, -3.3]$ and $b \in [-0.75, 4.5]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.75, 4.5]$ and $b \in [4.5, 9]$
 - C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.92, -0.45]$ and $b \in [4.5, 6]$
 - D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-11.25, -3.75]$ and $b \in [-0.75, 3]$
 - E. $(-\infty, \infty)$
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